

WHAT IS CLAIMED IS:

1. A method of supporting on a printed circuit board a circuit package including a substrate having a solder column array, the method comprising:
providing the circuit package with an over-sized lid that extends outwardly over an edge of the substrate;
electrically connecting the circuit package to the printed circuit board via the solder column array;
securing a plurality of supports to the printed circuit board in position underneath the lid of the circuit package while leaving a gap between the lid and the support; and
applying and maintaining a static compressive force to the circuit package relative to the printed circuit board, thereby causing the solder column array to creep until the gap is closed and a substantial portion of the compressive force is borne by the supports.
2. The method of claim 1 wherein securing a plurality of supports comprises securing at least one of the support at each corner of the circuit package underneath the lid of the circuit package.
3. The method of claim 1 wherein securing the support comprises extending a fastener through the printed circuit board and the support while the support is in position below the lid of the circuit package.
4. The method of claim 1 wherein securing the supports comprises placing a single band about all of the supports to prevent lateral movement of the supports from their position underneath the over-sized lid of the circuit package.
5. The method of claim 1 wherein securing the supports comprises providing each support with a detent and inserting the detent of each support into a corresponding hole of the printed circuit board that is positioned adjacent the corners of the circuit package.

6. The method of claim 1 wherein securing the supports comprises mechanically fastening the supports to the printed circuit board without an adhesive.
7. The method of claim 1 wherein securing the supports comprises:
providing each support with a main body and a pair of wing portions extending outwardly from the main body with the wing portions being generally perpendicular to each other; and
securing a fastener through the main body of the supports to the printed circuit board and extending each of the wing portions of the support under the lid of the circuit package and in contact against the edge of the circuit package.
8. An electronic component system comprising:
a circuit board;
an integrated circuit including a substrate having a solder column array connecting the circuit package to the circuit board and a lid that extends outwardly over an edge of the substrate; and
a plurality of supports with one support disposed at each corner of the integrated circuit package underneath the lid, and being sized and shaped to leave a gap between the lid and the support in a first state of the system, and to contact and support the lid without a gap in a second state of the system.
9. The system of claim 8 wherein the second state of assembly includes a static compressive load being applied to the integrated circuit package relative to the printed circuit board and the first state of assembly includes the integrated circuit package and the printed circuit board not bearing a compressive load.
10. The system of claim 9 wherein the solder column array is configured to decrease in height over time in response to application of the compressive load until a substantial portion of the compressive load is shifted to the supports.

11. The system of claim 8 wherein the support includes a body and a pair of wings extending from the body to be substantially perpendicular to each other for contacting the edges of the substrate of the integrated circuit package.
12. The system of claim 8 and further comprising:
a heat sink mounted on top of the integrated circuit package.
13. The system of claim 8 wherein each support includes a detent and the circuit board includes a plurality of holes shaped and sized for receiving the detent of the supports so that each support is secured to the circuit board upon insertion of the detent of the support into the hole of the printed circuit board.
14. The system of claim 8 wherein each support is made from at least one of a plastic material, a metal material, and a composite material, with the material having a coefficient of thermal expansion that is substantially the same as a coefficient of thermal expansion of the substrate and the solder column array.
15. An electronic component system comprising:
means for carrying circuit components;
means for performing circuit functions and for connecting to the carrying means; and
means for supporting the circuit performing means and connecting means by leaving a gap between the circuit function performing means and the circuit carrying means in a first state of assembly of the system, by translating a compressive force from the circuit performing means to the circuit carrying means without the gap in a second state of assembly of the system.
16. The system of claim 15 wherein the means for carrying circuit components comprises a circuit board, the means for performing circuit functions and connecting to the carrying means comprises an integrated circuit including a substrate having a solder column array connecting the circuit package to the circuit board and a lid that extends outwardly over an edge of the

substrate, and the means for supporting the circuit performing means and connecting means comprises a plurality of supports with one support disposed at each corner of the integrated circuit package underneath the lid, and being sized and shaped to leave a gap between the lid and the support in a first state of the system, and to contact and support the lid without a gap in a second state of the system.

17. A support for a column grid array package mounted on a printed circuit board via a solder column array of the package, the column grid array package having a substrate and a lid extending outwardly over an edge of the substrate, the support comprising:

a shim sized and configured to be insertable underneath the lid of the package, configured for securing to the printed circuit board, and configured to bear a substantial majority of a static compressive force applied to the package relative to the printed circuit board with the shim bearing the static compressive force only after a period of time during which the solder column array decreases in height due to creep.

18. The support of claim 17 wherein the shim comprises a main body and a pair of wing portions that extend outwardly from the main body generally perpendicular to each other.

19. The support of claim 17 wherein the shim comprises a pair of wing portions that are generally perpendicular to each other and joined together at one end to define a corner.

20. The support of claim 17 wherein the shim comprises a body including a detent configured for insertion into a portion of the printed circuit board to secure the shim relative to the printed circuit board.